Amendments to the Claims

1. *(Currently Amended)* A method for growing a mono-crystalline emitter for a bipolar transistor, comprising: providing a trench ~~(14)~~ formed on a silicon substrate ~~(16)~~ having opposed silicon oxide side walls ~~(12);~~ selectively growing a highly doped mono-crystalline layer ~~(18)~~ on the silicon substrate ~~(16)~~ in the trench ~~(14);~~ and non-selectively growing a second silicon layer ~~(20)~~ over the trench in order to form an amorphous or polysilicon layer over the silicon oxide sidewalls.

2. *(Currently Amended)* The method of claim 1, wherein the step of selectively growing a highly doped mono-crystalline layer is accomplished using selective epitaxial growth ~~(SEG).~~

3. *(Original)* The method of claim 2, wherein the selective epitaxial growth using a precursor selected from the group consisting of: SiH_2Cl_2, SiH_4, $SiCl_4$, $SiCl_3$, $Si2H_6$, Si_3H_8, GeH_4, and SiH_3CH_3.

4. *(Currently Amended)* The method of claim 1, wherein the step of non-selectively growing the second silicon layer is accomplished using differential epitaxial growth ~~(DEG).~~

5. *(Currently Amended)* The method of claim 1, wherein the mono-crystalline layer ~~(18)~~ is substantially grown only on an active area on the silicon substrate.

6. *(Original)* The method of claim 1, comprising the further step of performing a salicidation process using a silicide selected from the group consisting of: titanium, cobalt and nickel.

7. *(Currently Amended)* The method of claim 1, wherein the mono-crystalline emitter is n-typed doped with an element selected from the group consisting of: phosphorous ~~(P)~~ and arsenic ~~(As)~~

8. *(Currently Amended)* A method for forming a highly n-type doped layer in a semiconductor wafer, comprising: providing a first active region comprised of a silicon substrate ~~(16);~~ providing a second region comprised of silicon oxide ~~(12);~~ selectively growing a highly doped mono-crystalline layer ~~(18)~~ on the silicon substrate; and non-selectively growing a second silicon layer ~~(20)~~ over the silicon substrate and silicon oxide to form an amorphous or polysilicon layer over the silicon oxide ~~(12).~~

9. *(Original)* The method of claim 8, wherein the step of selectively growing a highly doped mono-crystalline layer is accomplished using selective epitaxial growth.

10. *(Original)* The method of claim 8, wherein the selective epitaxial growth uses a precursor selected from the group consisting of: SiH_2Cl_2 and SiH_4, $SiCl_4$, $SiCl_3$, $Si2H_6$, Si_3H_8, GeH_4, and SiH_3CH_3.

11. *(Original)* The method of claim 8, wherein the step of non-selectively growing the second silicon layer is accomplished using differential epitaxial growth.

12. *(Original)* The method of claim 8, wherein the mono-crystalline layer is substantially grown only on the active region.

13. *(Original)* The method of claim 8, comprising the further step of performing a salicidation process using a silicide selected from the group consisting of: titanium, cobalt and nickel.

14. *(Currently Amended)* The method of claim 8, wherein the highly n-type doped layer is doped with an element selected from the group consisting of: phosphorous ~~(P)~~ and arsenic ~~(As).~~

15. *(Currently Amended)* A method for growing a mono-crystalline emitter for a bipolar transistor, comprising: providing a trench ~~(14)~~ formed on a substrate ~~(16)~~ having opposed silicon oxide side walls ~~(12);~~ growing a highly doped layer ~~(18)~~ on the substrate in the trench ~~(14)~~ using selective epitaxial growth; and growing a second layer ~~(20)~~ over the trench ~~(14)~~ using differential epitaxial growth in order to form an amorphous or polysilicon layer over the silicon oxide sidewalls.

16. *(Original)* The method of claim 15, wherein the selective epitaxial growth using a precursor selected from the group consisting of: SiH_2Cl_2, SiH_4, $SiCl_4$, $SiCl_3$, $Si2H_6$, Si_3H_8, GeH_4, and SiH_3CH_3.

17. *(Original)* The method of claim 15, wherein the highly doped layer comprises a mono-crystalline layer that is substantially grown only on an active area on the substrate.

18. *(Original)* The method of claim 15, comprising the further step of performing a salicidation process using a silicide selected from the group consisting of: titanium, cobalt and nickel.

19. *(Currently Amended)* The method of claim 15, wherein the mono-crystalline emitter is n-typed doped with an element selected from the group consisting of: phosphorous ~~(P)~~ and arsenic ~~(As)~~.

20. *(Currently Amended)* The method of claim 15, wherein the mono-crystalline emitter is p-typed doped using boron ~~(B)~~.